Chiara Amorino

Curriculum Vitae

Universitat Pompeu Fabra
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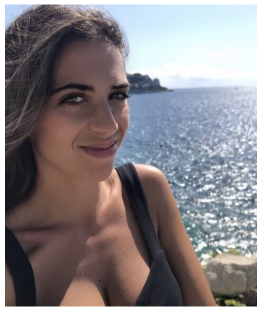

Education

Apr 2024 – Now **Assistant Professor**, Universitat Pompeu Fabra, Barcelona, Spain.

Sep 2020 – Mar 2024 **Postdoc in Mathematics**, Université du Luxembourg, Esch-sur-Alzette, Luxembourg.
Supervisor: Prof Mark Podolskij.
Project: Statistical Methods For High Dimensional Diffusions (STAMFORD), funded by ERC Consolidator grant.

Oct 2017– Aug 2020 **PhD in Applied Mathematics**, LaMME, Université Paris-Saclay, France.
Supervisor: Prof Arnaud Gloter.
Title: Bias correction for the drift and volatility estimation of a jump diffusion and non-parametric adaptive estimation of the invariant measure.
Jury: Alexandre Brouste (Rapporteur), Fabienne Comte, Arnaud Gloter, Agathe Guilloux, Eulalia Nualart (Rapporteur), Fabien Panloup, Mathieu Rosenbaum.

2015 - 2017 **Master Degree in Mathematics**, Universitá Statale di Milano, Italy.
Dissertation title: "Randomization method and backward differential stochastic equations for optimal control", under the supervision of prof. Marco Fuhrman.
Grade: magna cum laude ("110/110 e lode", with First-Class Honours)

Sep 2016 - Jan 2017 **Visiting student**, Université Paris VII Diderot, France.
Master M2MO : Modelisation Aléatoire

2012 - 2015 **Bachelor's degree in Mathematics**, Universitá Statale di Milano, Italy.

Major research interests

Jump diffusion processes, high dimensional statistics, volatility estimation, limit theorems, Malliavin calculus, nonparametric statistics, Stein's method, McKean-Vlasov SDEs, local differential privacy, minimax risk, convergence rate, fractional Brownian motion, thresholding methods, Bayesian statistics.

Publications

Feb 2025 C. Amorino, I. Nourdin, R. Shevchenko. Fractional interacting particle system: drift parameter estimation via Malliavin calculus (Submitted, `https://arxiv.org/pdf/2502.06514`)

Dec 2024 C. Amorino, C. Dion, A. Gloter, S. Lemler. Nonparametric estimation of the stationary density for Hawkes-diffusion systems with known and unknown intensity (Submitted, `https://arxiv.org/pdf/2412.08386`)

Oct 2024 C. Amorino, V. Pilipauskaitė. Kinetic interacting particle system: parameter estimation from complete and partial discrete observations (Submitted, `https://arxiv.org/pdf/2410.10226`)

Aug 2024 C. Amorino, E. Nualart, F. Panloup, J. Sieber. Fast convergence rates for estimating the stationary density in SDEs driven by a fractional Brownian motion with semi-contractive drift (Submitted, `https://arxiv.org/pdf/2408.15904`)

Aug 2024 C. Amorino, F. Pina, M. Podolskij. Sampling effects on Lasso estimation of drift functions in high-dimensional diffusion processes (Submitted, `https://arxiv.org/pdf/2408.08638`)

Jan 2024 C. Amorino, A. Gloter, H. Halconruy. Evolving privacy: drift parameter estimation for discretely observed i.i.d. diffusion processes under LDP (**Stochastic Processes and Applications**, pp. 1-34, `https://arxiv.org/abs/2401.17829`)

Jan 2024 C. Amorino, D. Belomestny, V. Pilipauskaitė, M Podolskij, S. Zhou. Polynomial rates via deconvolution for nonparametric estimation in McKean-Vlasov SDEs (**Probability Theory and Related Fields**, pp. 1-46, `https://arxiv.org/pdf/2401.04667.pdf`)

May 2023 C. Amorino, A. Gloter. Minimax rate for multivariate data under componentwise local differential privacy constraints (**Annals of Statistics**, in press `https://arxiv.org/pdf/2305.10416.pdf`)

Feb 2023 C. Amorino, A. Jaramillo, M. Podolskij. Quantitative and stable limits of high-frequency statistics of Lévy processes: a Stein's method approach (**Bernoulli**, under revision `https://arxiv.org/pdf/2302.05885.pdf`)

Oct 2022 C. Amorino, A. Jaramillo, M. Podolskij. Optimal estimation of local time and occupation time measure for an α-stable Lévy process (**Modern Stochastics: Theory and Applications**, pp 1-20 `https://arxiv.org/pdf/2210.07672.pdf`)

Aug 2022 C. Amorino, A. Heidari, V. Pilipauskaitė, M. Podolskij. Parameter estimation of discretely observed interacting particle systems (**Stochastic Processes and Applications**, pp. 350-386, `https://arxiv.org/pdf/2208.11965.pdf`)

Aug 2022 C. Amorino, A. Gloter. Malliavin calculus for the optimal estimation of the invariant density of discretely observed diffusions in intermediate regime (**Annales de l'Institut Henri Poincaré: Probabilités et Statistiques**, pp. 1-45, `https://arxiv.org/pdf/2208.03253.pdf`)

Feb 2022 C. Amorino, A. Gloter. Estimation of the invariant density for discretely observed diffusion processes: impact of the sampling and of the asynchronicity (**Statistics**; pp. 1-47 `https://arxiv.org/pdf/2203.01055.pdf`)

Oct 2021 C. Amorino, A. Gloter. Minimax rate of estimation for invariant densities associated to continuous stochastic differential equations over anisotropic Holder classes (**Scandinavian Journal of Statistics**, pp. 1-64, `https://arxiv.org/pdf/2110.02774.pdf`)

Jan 2021 C. Amorino, E. Nualart. Optimal convergence rates for the invariant density estimation of jump-diffusion processes (**ESAIM: Probability and Statistics**; pp. 126-151, `https://www.esaim-ps.org/articles/ps/abs/2022/01/ps210004/ps210004.html`)

Nov 2020 C. Amorino, C. Dion, A. Gloter, S. Lemler. On the nonparametric inference of coefficients of self-exciting jump-diffusion (**Electronic Journal of Statistics**; pp. 3212-3277, `https://arxiv.org/pdf/2011.12387.pdf`)

Nov 2020 C. Amorino. Rate of estimation for the stationary distribution of jump-processes over anisotropic Holder classes (**Electronic Journal of Statistics**; pp. 5067-5116, `https://doi.org/10.1214/21-EJS1913`)

Jan 2020 C. Amorino, A. Gloter. Invariant density adaptive estimation for ergodic jump diffusion processes over anisotropic classes (**Journal of Statistical Planning and Inference**; pp. 106 - 129, `https://www.sciencedirect.com/science/article/pii/S037837582030121X`)

Oct 2019 C. Amorino, A. Gloter. Joint estimation for volatility and drift parameters of ergodic jump diffusion processes via contrast function (**Statistical Inference for Stochastic Processes**; pp. 1 - 88, `https://link.springer.com/article/10.1007/s11203-020-09227-z`)

Apr 2019 C. Amorino, A. Gloter. Unbiased truncated quadratic variation for volatility estimation in jump diffusion processes (**Stochastic Processes and Applications**; pp. 5888 - 5939, `https://doi.org/10.1016/j.spa.2020.04.010`)

Jul 2018 C. Amorino, A. Gloter. Contrast function estimation for the drift parameter of ergodic jump diffusion process (**Scandinavian Journal of Statistics**; pp. 1 - 68, `https://doi.org/10.1111/sjos.12406`)

Talks

Dec 16-19, 2024 **International Conference on Statistics and Data Science (2024 ICSDS)**
Nice, France (invited).

Dec 14 -16, 2024 **18th International Joint Conference CFE-CMStatistics**
London, United Kingdom (invited).

Oct 30 - Nov 1, 20244 **Seminario Interinstitucional de Matrices Aleatorias**
Merida, Mexico (invited)

Oct 17, 2024 **Seminar at the ESSEC Business School**
Paris, France (invited).

Sep 17 -19, 2024 **Workshop on statistical aspects of non-linear inverse problems**
Cambridge, United Kingdom (invited).

Sep 9 -13, 2024 **Workshop on probabilistic and statistical analysis of random networks, stochastic processes and deep neural networks**
Nice, France (invited).

Aug 28 -30, 2024 **Journées MAS 2024**
Poitiers, France (invited).

Jul 8 -12, 2024 **Organizer of a minisymposium at Bachelier World Congress 2024**
Rio de Janeiro, Brazil.

Jun 24 -28, 2024 **Research Stay at University of Luxembourg**
Esch-Sur-Alzette, Luxembourg.

Jun 17 -19, 2024 **Research Stay at Aarhus University**
Aarhus, Denmark.

Jun 10 -14, 2024 **4th Italian Meeting on Probability and Mathematical Statistics**
Rome, Italy (invited).

May 30-31, 2024 **Financial Econometrics Workshop**
Barcelona, Spain (invited).

Apr 25, 2024 **Workshop: heavy tails in machine learning**
London, United Kingdom (invited).

Feb 29, 2024 **Workshop in Time Series and Directional Statistics**
Esch-sur-Alzette, Luxembourg (invited).

Feb 6-8, 2024 **Stochastic Analysis and Statistics**
Tokyo, Japan (invited).

Jan 23, 2024 **Séminaire de Statistique du LPSM**
Paris, France (invited).

Jan, 2024 **Research Stay at UniversitÃă di Verona**
Verona, Italy.

Nov 20-24,2023 **Symposium on Probability and Stochastic Processes**
Guanajuato, Mexico (invited).

Sep 14-15,2023 L^2 **Workshop in Probability and Statistics**
Metz, France (invited).

Sep 4-6,2023 **Kyoto Seminar**
Kyoto, Japan (invited).

Sep 1-2,2023 **Waseda Seminar**
Tokyo, Japan (invited).

Aug 29-31,2023 **Workshop on random matrix theory and high dimensional statistics for complex system**
Esch-sur-Alzette, Luxembourg (invited).

Jul 9-10,2023 **2nd Florence-Paris workshop on Statistics of Random Processes and Its Applications to Financial Econometrics**
Florence, Italy (invited).

Jun 19-22,2023 **Nordstat 2023**
Gothenburg, Sweden.

Jun 6-9,2023 **SIAM Conference on Financial Mathematics and Engineering**
Philadelphia, U.S. (invited).

Mar27-29,2023 **Dynstoch 2023**
London, UK.

Mar 7-10,2023 **German Probability and Statistics Days**
Essen, Germany.

Feb 15-17,2023 **Luxembourg Workshop in Stochastic Analysis**
Esch-sur-Alzette, Luxembourg (invited).

Feb 15,2023 **Workshop at University of Verona**
Verona, Italy (invited).

Feb 2, 2023 **Workshop at Universitat Pompeu Fabra Barcelona**
Barcelona, Spain (invited).

Jan 26-28,2023 **Bergamo-Waseda workshop on Inference for Stochastic Process and Applications**
Bergamo, Italy (invited).

Jan 23-25,2023 **Luxembourg-Waseda workshop**
Esch-sur-Alzette, Luxembourg (invited).

Jan 9, 2023 **Séminaire Parisien de Statistique**
Paris, France (invited).

Jan, 2023 **Research Stay at Université Paris Dauphine**
Paris, France

Jun 29, 2022 **Dynstoch 2022**
Paris, France.

Jun 20-24,2022 **International Symposium of Nonparametric Statistics**
Paphos, Cyprus (invited).

Jun 13-16,2022 **Third Italian Meeting on Probability and Mathematical Statistics**
Bologna, Italy (invited).

Apr 26, 2022 **Workshop at Universitat Pompeu Fabra Barcelona**
Barcelona, Spain (invited).

Apr 2022 **Research Stay at Universitat Pompeu Fabra**
Barcelona, Spain (invited).

Mar 10, 2022 **Séminaire de Probabilités et Statistique du laboratoire Modal X**
Nanterre, France (invited).

Feb 9, 2022 **Workshop at National University of Ireland**
Maynooth, Ireland (invited).

Dec 9, 2021 **Séminaire de Probabilités et Statistique du CERMICS**
Paris, France (invited).

Nov 26, 2021 **Séminaire de Probabilités et Statistique de l'INRIA PASTA**
La Petite Pierre, France (invited).

Nov 25, 2021 **Séminaire de Probabilités et Statistique de l'IECL - Université de Nancy**
Nancy, France (invited).

Nov 22, 2021 **WIP seminar - Luxembourg University**
Esch-sur-Alzette, Luxembourg (invited).

Oct 21,2021 **Stochastic processes and statistics workshop at Humboldt-Universitat zu Berlin**
Berlin, Germany (invited).

Mar 11, 2021 **Probability and Statistics seminar - Luxembourg University**
Esch-sur-Alzette, Luxembourg (invited).

Jan 21, 2021 **Séminaire de Statistique du LMRS**
Rouen, France (invited).

Jan 12, 2021 **Webinar Se Mi Narri di Matematica**
Pavia, Italy (invited).

Sep 21, 2020 **Séminaire Parisien de Statistique**

Paris, France (invited).

Jul 2, 2020 **Defense PhD**

Évry, France.

Jun 10-12,2020 **Dynstoch 2020 (Canceled, due to Covid-19 emergency)**

Aarhus, Denmark.

May 20,2020 **Workshop Humboldt-Universitat zu Berlin**

Berlin, Germany (invited).

May 10-15,2020 **Jeunes Probabilistes et Statisticiens 2020 (Canceled, due to Covid-19 emergency)**

Saint Pierre d'Oléron, France.

Mar 24-27, 2020 **German Probability and Statistics Days 2020 (Canceled, due to Covid-19 emergency)**

Dresden, Germany.

Mar 19, 2020 **Web conference École Polytechnique**

Paris, France (invited).

Sep 2-6, 2019 **StatMathAppli 2019**

Frejus, France.

Jun 17-20, 2019 **Second Italian Meeting on Probability and Mathematical Statistics**

Vietri sul Mare, Italy.

Jun 12-14, 2019 **Dynstoch 2019**

Delft, The Netherlands.

Organization conferences

Co-organizer of the Statistics seminar at Universitat Pompeu-Fabra, 2024-now

Co-organizer of the Probability and Statistics seminar at University of Luxembourg, year 2023-2024

Co-organizer of a conference on high dimensional statistics at the Mathematics Department of the University of Luxembourg, 28 Aug-1 Sep 2023.

Co-organizer of "Statistics for Stochastic Processes: SDEs, SPDEs and concentration of measure" at the Mathematics Department of the University of Luxembourg, 7-9 September 2022.

Visiting

Jan 2024 Visiting Cecilia Mancini at **Universitá di Verona**, Verona, Italy.

Jan 2023 Visiting Marc Hoffmann at **Université Paris Dauphine**, Paris, France.

Apr 2022 Visiting Eulalia Nualart at **Universitat Pompeu Fabra**, Barcelona, Spain.

Review activity

Referee for scientific journals: *AIMS Mathematics*, *Annals of Statistics*, *Applied Mathematics and Computation*, *Bernoulli*, *Cogent Economics and Finance*, *Econometric Theory*,*Electronic Journal of Statistics*, *Journal of Computational and Applied Mathematics*, *Journal of Econometrics*, *Journal of Multivariate Analysis*, *Mathematical Methods in the Applied Sciences*, *Statistica Sinica*, *Statistical Inference for Stochastic Processes*, *Stochastic Processes and Applications*, *Stochastics*, *Theory of Probability and Mathematical Statistics*.

Academic Tutoring

Supervision of Master Thesis of Proenca Raphael

Master of science in Mathematics at Université du Luxembourg. Esch-sur-Alzette, Luxembourg.

Supervision of Master Thesis of Muharemovic Mirza

Master of science in Mathematics at Université du Luxembourg. Esch-sur-Alzette, Luxembourg.

Supervision of Master Student Seminar

Master of science in Mathematics at Université du Luxembourg. Esch-sur-Alzette, Luxembourg.

Supervision of Master Project on 'Fractional Brownian motion: an introduction.'

Master of science in Mathematics at Université du Luxembourg. Esch-sur-Alzette, Luxembourg.

Supervision of Master Project on 'The secretary problem'

Master of science in Mathematics at Université du Luxembourg. Esch-sur-Alzette, Luxembourg.

Supervision of Bachelor Thesis on 'Kernel density estimators: convergence rate and minimax risk'

Bachelor of science in Mathematics at Université du Luxembourg. Esch-sur-Alzette, Luxembourg.

Associate of the Maths Team

Training for high-school students interested in participating in mathematical contests. Esch-sur-Alzette, Luxembourg.

Teaching activities

Apr 2024 - Now — Lecture and exercises for 'Probability and Statistics' at Universitat Pompeu Fabra. Barcelona, Spain

Feb 2022 - Feb 2024 — Exercises for 'Continuous Time Models in Mathematical Finance' with G. Peccati, Master of Mathematics at Université du Luxembourg. Esch-sur-Alzette, Luxembourg

Sep 2021 - Feb 2024 — Lecture for 'Probabilistic Models in Finance', Master of Mathematics at Université du Luxembourg. Esch-sur-Alzette, Luxembourg

Feb 2021 -Sep 2021 — Lecture for 'Analyse et Applications 2', Bachelor of science in Physics at Université du Luxembourg. Esch-sur-Alzette, Luxembourg

Oct 2017 - Aug 2020 — Computer lab (in R) for 'Analyse des Données', Bachelor of science in Bioinformatics and Biology at Université d'Évry Val d'Essonne. Évry, France

Oct 2017 - Aug 2020	Exercises for 'Analyse des Données', Bachelor of science in Bioinformatics and Biology at Université d'Évry Val d'Essonne. Évry, France
Oct 2017 - Aug 2020	Exercises for 'Probabilités', Bachelor of science in Informatics and Bioinformatics at Université d'Évry Val d'Essonne. Évry, France
Oct 2017 - Aug 2020	Exercises for 'Statistiques', Bachelor of science in Informatics and Bioinformatics at Université d'Évry Val d'Essonne. Évry, France

Languages

Italian	Mother tongue
English	Fluent
French	Fluent
Spanish	Fluent
German	Beginner

Computer Skills

LaTeX, Python, R, SAS, Matlab, C

Administrative tasks

2014 - 2016	Students' representative at Universitá Statale di Milano. Milano, Italy
2010 - 2012	Students' representative at I.I.S. Alessandro Volta. Lodi, Italy

Extra-curricular activities

Feb 2017	**Representation of KPMG Italy during the KICC business game** Business consulting team work. KPMG Innovation and Collaboration Challenge is about creating an idea for a company in order to transform its current business model. The business cases are characterised by the importance of Big Data and Fin Tech. *Milan, Italy*
Jul 2016	**Modelling week ECMI**, an exchange week between University and Industry in which we modeled mathematically some real-life problems. My team worked on the data mining in a dataset with noise. *Sofia, Bulgaria*
Mar-Jun 2015	**Teaching internship at the high school I.I.S. A. Volta** *Lodi, Italy*
2011 - 2017	**Math tutor** *Lodi - Milan, Italy*